

WHAT IS CLAIMED IS:

1. Method of manufacturing a diffusing reflector comprising the processes of:

preparing for a substrate;

forming a resin film having photosensitivity on said substrate;

providing gathering of pillar-shaped bodies isolated each other through patterning of said resin film with the photolithography;

forming uneven surface layer having the maximum inclination angle of under  $12^\circ$  by gently deforming individual said pillar-shaped bodies through the reflow; and

forming a metal film on gathering of said gently deformed uneven surface layer.

2. Method of manufacturing a diffusing reflector as claimed in claim 1, wherein said maximum inclination angle is about  $10^\circ$ .

3. Method of manufacturing a diffusing reflector as claimed in claim 1, comprising a process of alleviating said maximum inclination angle by coating said gently deformed uneven surface layer with resin to bury the flat opening between said uneven surface layers isolated each other.

4. Method of manufacturing a diffusing reflector as claimed in claim 1, wherein said reflow process is the heat

treatment under the temperature of about 220°C.

5. Method of manufacturing a diffusing reflector as claimed in claim 1, wherein gathering of polygonal pillar-shaped bodies isolated each other by the divided patterning of said resin film by said photolithography is provided.

6. Method of manufacturing a diffusing reflector as claimed in claim 5, wherein said resin film is patterned by the divided patterning means so that size of gap between said polygonal pillar-shaped bodies isolated each other is almost equal to the minimum resolution of photolithography.

7. Diffusing reflector comprising:

substrate;

resin film forming heaping areas;

metal film formed on said resin film; wherein

said resin film forming heaping areas can be attained by reflow of gathering of pillar-shaped bodies previously isolated each other leaving openings through the patterning and the maximum inclination angle of said heating areas is controlled under 12°.

8. Diffusing reflector as claimed in claim 7, wherein said maximum inclination angle is about 10°.

9. Diffusing reflector as claimed in claim 7, wherein size of said opening of said pillar-shaped bodies is almost

equal to the minimum resolution of photolithography.

10. Diffusing reflector as claimed in claim 7, wherein gently heaped areas are formed by burying the gaps being left with the other resin film after reflow of said resin film consisting of gathering of pillar-shaped bodies.

11. Diffusing reflector as claimed in claim 7, wherein said reflow is the heat treatment under the temperature of about 220°C.

12. Diffusing reflector as claimed in claim 7, wherein the cross-sectional view of said resin film forming the heaping areas is a polygonal shape.

13. Reflection type display apparatus comprising:  
transparent first substrate to be arranged in the incident side;

second substrate to be coupled with said first substrate via the predetermined gap and arranged in the reflection side;

electro-optical layer located in said substrate side within said gap;

diffusing reflection layer located in the second substrate side within said gap; and

electrode formed at least one of said first substrate and second substrate for application of voltage to said electro-optical layer; wherein

said diffusing reflection layer is composed of a resin film forming heaping areas can be attained by the reflow of gathering of pillar-shaped bodies isolated each other previously patterned leaving openings and the maximum inclination angle of the heating areas is controlled under  $12^{\circ}$ .

14. Reflection type display apparatus as claimed in claim 13, wherein said maximum inclination angle is about  $10^{\circ}$ .

15. Reflection type display apparatus as claimed in claim 13, wherein size of said opening of said pillar-shaped bodies is almost equal to the minimum resolution of photolithography.

16. Reflection type display apparatus as claimed in claim 13, wherein gentle heaping areas are formed by conducting the reflow process to said resin film consisting of gathering of pillar-shaped bodies and then burying the openings being left with the other resin.

17. Reflection type display apparatus as claimed in claim 13, wherein said reflow process is the heat treatment under the temperature of about  $220^{\circ}\text{C}$ .

18. Reflection type display apparatus as claimed in claim 13, wherein cross-sectional view of said resin film forming the heaping areas is polygonal shape.

19. Reflection type display apparatus as claimed in claim 13, wherein a polarizing plate is provided in said first substrate side and a liquid crystal layer having the function as the  $(1/4)$ -wavelength plate depending on the voltage application condition is used as an electro-optical layer.

20. Reflection type display apparatus as claimed in claim 13, wherein a  $(1/4)$ -wavelength plate is provided between said polarizing plate and said liquid crystal layer said liquid crystal layer is composed of nematic liquid crystal layer having positive dielectric anisotropy and twisted alignment and also functions as the  $(1/4)$ -wavelength plate when a voltage is not applied or loses the function of the  $(1/4)$ -wavelength plate when a voltage is applied.